

PROCEEDINGS
OF THE
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DESCRIPTIONS OF NEW THYSANOPTERA.

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Eleven new species of Thysanoptera are described below. Of these, eight are from the United States and one each from Cuba, Panama, and Southern Nigeria. A new genus is also erected for an odd species from Virginia and Maryland. All types are in the collection of the author.

The writer must express his obligations to Lt.-Col. Sir David Prain, Director of the Royal Botanic Gardens at Kew, England, for securing the determination of the food plant of the new *Physothrips* from Southern Nigeria; to Prof. Patricio Cardin, of the Estación Experimental Agronomica at Santiago de las Vegas, for material of the new Cuban species; and to the several other collectors who have contributed most of the specimens on which these studies are based.

***Æolothrips annectans* sp. nov.**

Female (macropterous).—Length about 1.5 mm. Color dark blackish brown, with a reddish cast, due to crimson hypodermal pigmentation in the thorax, abdomen, and femora; antennæ with segment 3 and basal half of segment 4 pale yellowish white, the remainder of antennæ blackish brown.

Head about one and one-fourth times as wide as long, about equal in length to prothorax, not transversely striate, and with a few minute spines on occiput and cheeks; anterior margin straight, not at all emarginate by a forward prolongation of the eyes and without median tubercle; cheeks slightly swollen. Eyes less than half as long as head and about 0.6 as wide as their interval, prolonged as usual on ventral surface of head, and with the more dorsal facets separated by a distance much less than their own diameters. Ocelli more than twice the diameter of facets of eyes, nearly equidistant. Antennæ about 2.75 times as long as head, rather stout; segment 3 about 1.27 times as long as 1 and 2 combined and

about 4.7 times as long as wide; 4 about 0.8 the length of 3; 5-9 together very slightly longer than 3, the last four segments together nearly as long as 5, 9 shorter than 8; sensory area on ventral surface of segment 5 circular. Maxillary palpi three-segmented; labial palpi four-segmented.

Prothorax about two-thirds as long as greatest width, distinctly broadened behind. Mesothorax a little less than 1.4 times as broad as prothorax, anterior angles broadly rounded; mesoscutum closely transversely striate. Metathorax with sides roundly converging posteriorly; metascutum reticulate. Wings of fore pair moderately slender (about seven times as long as width at middle), slightly narrower in basal third; venation normal; basal fifth and apex white, remainder dark brown-gray, except a white spot occupying costal half of middle fifth; hind wings pale gray, darker in second and fourth fifth. Legs rather short and stout.

Abdomen stout, of normal structure.

Measurements of holotype: Length 1.51 mm.; head, length 0.149 mm., width 0.187 mm.; prothorax, length 0.144 mm., width 0.229 mm.; pterothorax, width 0.312 mm.; fore wing, length 0.960 mm., width near base 0.122 mm., at middle 0.132 mm.; abdomen, width 0.377 mm.

Antennal segments:	1	2	3	4	5	6	7	8	9
Length (μ)	36	53	113	92	66	14	13	14	10
Width (μ)	36	28	24	24	24	18	15	11	6
Total length of antenna, 0.411 mm.									

Described from a homogeneous series of 7 females bearing the following data: *Maryland*: Great Falls (type locality), May 23, 1915 (1 female), on foliage of *Robinia pseudo-acacia* L. [J. D. Hood]; Beltsville, May 2, 1915 (1 female), on foliage [W. L. McAtee]. *Virginia*: Vienna, May 3, 1913 (3 females), on foliage of pear [R. A. Cushman]; Rockfish, June 6, 1915 (1 female), in flower of *Erigeron annuus* L. [L. O. Jackson]. *New York*: July 10 (1 female), on foliage of pear [H. Glasgow].

The color of the fore wings and antennæ and the proportionate lengths of the antennal segments separate this species very readily from its North American congeners. It is apparently very close to the European *Æ. melaleuca* Haliday, which can not now be secured for comparison.

***Heterothrips azaleæ* sp. nov.**

(Pl. III, Fig. 1.)

Female (macropterous).—Length about 1.26 mm. Color dark blackish brown, with tarsi, distal ends of tibiæ, and third antennal segment pale grayish yellow; fore wings dark brownish gray except for a white transverse subbasal band.

Head about 1.4 times as wide as median dorsal length, distinctly shorter than prothorax, widest behind eyes, thence narrowing abruptly to eyes and tapering slightly to base; surface with a few minute spines, impressed and transversely rugose in front of anterior ocellus, smooth between ocelli, and with four or five anastomosing striæ on occiput;

frontal costa with deep U-shaped emargination; ocellar area not delimited by chitinous lines. Eyes setose, 0.6 as long as head, as wide as their dorsal interval. Ocelli of posterior pair twice the diameter of anterior ocellus, a little less than half as wide as their interval. Antennæ about 2.6 times as long as head; segment 3 subconical, about 2.5 times as long as wide, with deep incisions at basal fifth and basal two-fifths; 4 more than half as wide as long, roundly tapering to base; 5-8 more or less barrel-shaped, with sense cones; 9 a little more than twice as long as wide; segments 1 and 2 nearly concolorous with head; 3 pale grayish yellow, slightly infusate apically; 4-9 blackish brown.

Prothorax about one and one-third times as long as head and about 1.66 times as wide as long, sides and posterior margin rounded, anterior margin straight; notum with a few short spines, its surface free from sculpture except for two or three anastomosing striæ near anterior and posterior margins. Wings of fore pair half as wide at middle as near base, the greatest subbasal width (exclusive of scale) about one-ninth the length of wing; costal margin, anterior vein, and posterior vein with about 32, 26, and 23 short, stout spines, respectively, these being closer together toward base of wing.

Abdomen stout; pubescence close, disposed on strong, anastomosing lines (much as in *H. pectinifer*, figured in Ins. Insc. Menstr., Vol. III, 1915, Pl. 1, Fig. 7, but even closer); posterior margins of abdominal tergites 1-7 fringed at sides with contiguous, chitinous scales or plates, whose apical margins are evenly produced in long, slender spines, giving a comb-like appearance; median line of tergite of segment 1 with a few minute spines on posterior margin; segments 2-5 with a few slender spines at middle of posterior margin; 6 and 7 with a regular fringe of stronger spines between the lateral plates; sternites 2-6 fringed across their entire posterior margins with chitinous plates, which are divided apically into about ten slender spines.

Measurements of holotype: Length 1.26 mm.; head, length 0.114 mm., width 0.156 mm.; prothorax, length 0.156 mm., width 0.251 mm.; pterothorax, width 0.305 mm.; fore wing, length 0.816 mm., width at base 0.090 mm., at middle 0.045 mm.; abdomen, width 0.372 mm.

Antennal segments:	1	2	3	4	5	6	7	8	9
Length (μ)	27	42	69	48	30	30	23	16	17
Width (μ)	31	29	27	29	21	19	15	11	7
Total length of antenna, 0.302 mm.									

Described from 5 females taken in flowers of *Azalea nudiflora* L., at Beltsville, Maryland, May 2, 1915, by W. L. McAtee and L. O. Jackson.

This species bears a close resemblance to *H. arisæmæ*, but may be known by the curved lateral margins of segment 4 of the antennæ; the greater width of segment 5, which is distinctly more than half as wide as 4; the shorter and stouter terminal antennal segment; and the rather closely pubescent abdomen. The male, when discovered, will of course be found to lack the finger-like chitinous processes of the ninth tergite, which occur in *analisis* and *vitis*.

Heterothrips Iyoniae sp. nov.

(Pl. III, Fig. 2.)

Female (macropterous).—Length about 1.1 mm. Color dark blackish brown with tarsi, distal ends of tibiae, and third antennal segment pale grayish yellow; fore wings dark brownish gray except for a white, transverse, subbasal band.

Head about 1.7 times as wide as median dorsal length, distinctly shorter than prothorax, widest behind eyes, thence narrowing abruptly to eyes and tapering slightly to base; surface with a few minute spines, impressed and transversely rugose in front of anterior ocellus, smooth between ocelli, and with four or five anastomosing striae on occiput; frontal costa with deep U-shaped emargination; ocellar area not delimited by chitinous lines. Eyes setose, two-thirds as long as head, as wide as their dorsal interval. Ocelli of posterior pair twice the diameter of anterior ocellus, a little less than half as wide as their interval. Antennae about three times as long as head; segment 3 subconical, three times as long as wide, with deep incisions at basal fifth and basal two-fifths; 4 more than half as wide as long, roundly tapering to base; 5-8 more or less barrel-shaped, with sense cones; 9 about three times as long as wide; segments one and 2 nearly concolorous with head; 3 yellow, tipped with gray; 4 blackish brown, with an apical band of yellow and with middle of basal half paler; 5-9 blackish brown.

Prothorax about one and one-half times as long as head and about 1.5 times as wide as long, sides and posterior margin rounded, anterior margin straight; notum with a few short spines, its surface free from sculpture except for two or three anastomosing striae near posterior margin. Wings of fore pair half as wide at middle as near base, the greatest subbasal width (exclusive of scale) about one-eighth the length of the wing; costal margin, anterior vein, and posterior vein with about 28, 25, and 18 short, stout spines, respectively, these being closer together toward base of wing.

Abdomen stout; pubescence very sparse, disposed on strong, anastomosing lines (much as in *H. flavicornis*, figured in *Ins. Insc. Menstr.*, Vol. III, 1915, Pl. I, Fig. 3); posterior margins of abdominal tergites 1-7 fringed at sides with contiguous, chitinous scales or plates, whose apical margins are evenly produced in long slender spines, giving a comb-like appearance; median line of tergite of segment 1 unarmed; segments 2-5 with a few slender spines at middle of posterior margin; 6 and 7 with a regular fringe of stronger spines between the lateral plates; sternites 2-6 fringed across their entire posterior margins with chitinous plates, which are divided apically into about ten slender spines.

Measurements of holotype: Length 1.07 mm.; head, length 0.099 mm., width 0.149 mm.; prothorax, length 0.147 mm., width 0.223 mm.; pterothorax, width 0.284 mm.; fore wing, length 0.756 mm., width at base 0.090 mm., at middle 0.045 mm.; abdomen, width 0.396 mm.

Antennal segments:	1	2	3	4	5	6	7	8	9
Length (μ)	24	39	81	46	28	28	21	17	23
Width (μ)	30	27	27	27	20	16	12	10	7

Total length of antenna, 0.307 mm.

Male (macropterous).—Length about 0.8 mm. Color and structure essentially as in female. Tergite of abdominal segment 9 with 2 pairs of long, strong bristles behind middle, but without chitinous finger-like processes.

Measurements of allotype: Length 0.822 mm.; head, length 0.084 mm., width 0.129 mm.; prothorax, length 0.123 mm., width 0.199 mm.; pterothorax, width 0.240 mm.; fore wing, length 0.588 mm., width at base 0.078 mm., at middle 0.039 mm.; abdomen, width 0.216 mm.

Antennal segments:	1	2	3	4	5	6	7	8	9
Length (μ)	21	35	64	42	23	24	17	16	19
Width (μ)	28	24	22	22	18	14	11	10	7
Total length of antenna,	0.261 mm.								

Described from 6 females and 1 male taken in flowers of *Lyonia mariana* L., at Browns Mills, New Jersey, June 3, 1915, by H. K. Plank.

The elongate third antennal segment, which is three times as long as its greatest width, allies this species to *decacornis* (described from Mexico), to *borinquen* (from Porto Rico), to *pectinifer* (known only from Arizona), and to *flavicornis* (a Panama species). The antennal coloration separates it at once from *flavicornis*, which, as the name indicates, has yellow antennæ; *decacornis* differs in the very long pedicel of the third segment of the antenna; *borinquen* is separable by the delimited ocellar area and the form of the chitinous abdominal plates; while *pectinifer* differs in the much longer and proportionately more slender fourth antennal segment.

Sericothrips baptisiæ sp. nov.

Female (macropterous).—Length about 0.9 mm. General color pale brownish yellow, with numerous, clearly defined, dark brown markings.

Head widest across eyes, uniform dark blackish brown in front of occipital line and on ventral and lateral surfaces to base of mouth-cone, abruptly pale yellow behind, about 1.5 times as wide as long and 2.2 times as wide as length in front of occipital line; cheeks straight, slightly converging posteriorly; frontal costa with broad, almost rectangular emargination; entire head transversely striate with close anastomosing lines, excepting the elevated ocellar region which is irregularly and minutely roughened; occipital line evenly arcuate, almost touching eyes or at least much closer to them than to base of head. Eyes nearly as long as the part of head anterior to occipital line, prominent, protruding, pilose, and about 0.8 as wide as their interval. Ocelli almost equidistant, pigment red. Antennæ about 2.4 times the length of head, dirty pale yellow in color, with extreme apex of 3, apical third of 4, pedicel and apical two-fifths of 5, and 6-8 smoky brown.

Prothorax about 1.1 times the length of head, or 1.7 times the length of head in front of occipital line, and about one and three-fourths times as wide as long, lateral and posterior margins rounded, anterior margin nearly straight; pronotum pale yellow except for a large, sellate, sharply defined, dark brown blotch occupying posterior two-thirds of median two-thirds, this blotch broadly emarginate in front and more narrowly

behind, the sides straight; coxæ dark brown, femora and tibiæ with a large brown blotch on outer surface at middle; pronotum with close, raised, transverse, anastomosing lines, and very minutely roughened between them, the sculpture slightly closer on the median blotch; bristles normal to the genus. Pterothorax dark blackish brown, with a pale yellowish girdle just behind middle coxæ; mesoscutum more closely striate than pronotum, the lines converging to three points on posterior margin; metascutum closely, longitudinally striate. Fore wings brown at extreme base, then with a white transverse band, the remainder of wing brownish gray, paler at middle and again at apex; nearly twice as wide just beyond scale as at middle, the greatest subbasal width (exclusive of scale) about one-tenth the length of wing; costal margin with about 28 equidistant bristles, anterior vein with about 24, and posterior vein with two widely separated ones near apex of wing. Middle and hind legs pale yellow in ground color, broadly marked with dark brown around middle of femora and along outer surface of tibiæ, coxæ dark brown.

Abdomen stout, about 1.6 times the width of prothorax; general color brownish yellow, darker toward base, with segments 7-10 dark brown; a black line extends across base of tergites 2-7 which are marked near base with three pairs of minute black dots (tergite 2 has only the inner two pairs), the inner two pairs approximate and just lateral to the median third; sternites 3-6 with two pairs of approximate similar dots at margins of median third; pubescence close and distinct, absent only from most of median third of tergite 1 and from apical half of median third of tergites 2-6; segment 10 divided above in apical two-fifths; bristles normal to the genus.

Measurements of holotype: Length 0.924 mm.; head, length 0.110 mm., length to collar 0.073 mm., width 0.165 mm.; prothorax, length 0.124 mm., width 0.216 mm.; pterothorax, width 0.276 mm.; fore wing, length 0.792 mm., width near base 0.078 mm., at middle 0.045 mm.; abdomen, width 0.360 mm.

Antennal segments:	1	2	3	4	5	6	7	8
Length (μ)	21	37	49	47	40	46	9	14
Width (μ)	27	29	21	19	18	17	7	5
Total length of antenna, 0.263 mm.								

Male (macropterous).—Length about 0.7 mm. Color as in female except that the tip of abdomen is brown only in segments 8-10, and that segment 8 also is marked at base with a black transverse line and three pairs of black dots.

Measurements of allotype: Length 0.696 mm.; head, length to collar 0.055 mm., width 0.140 mm.; prothorax, length 0.097 mm., width 0.190 mm.; pterothorax, width 0.216 mm.; fore wing, length 0.612 mm., width near base 0.057 mm., at middle 0.033 mm.; abdomen, width 0.228 mm.

Antennal segments:	1	2	3	4	5	6	7	8
Length (μ)	17	32	44	42	35	41	8	12
Width (μ)	22	24	18	17	16	15	6	4
Total length of antenna, 0.231 mm.								

Described from 10 females and 1 male, all taken by Mr. W. L. McAtee on *Baptisia tinctoria* L., at Mount Vernon, Virginia (type locality), June 27, 1915, and at Odenton, Maryland, June 20, 1915.

In many points of structure this species shows affinities with *cingulatus*, to which it is perhaps most closely related.

Frankliniella citripes sp. nov.

Female (macropterous).—Length about 1.6 mm. Color dark brown, somewhat paler anteriorly, with all tibiae, tarsi, and most of fore femora, pale lemon yellow; segment 3 of antennæ, and at least basal half of 4 and 5, pale yellow; fore wings clear in basal third, brownish gray beyond, becoming paler toward apex.

Head about 1.2 times as wide as long, much narrowed behind; occiput with about three quite distinct, transverse, anastomosing lines and several fainter ones in front of them; interocellar bristles long, distinctly shorter than eyes, a large postocular pair two-thirds as long. Eyes about 0.6 the length of head, about two-thirds as wide as their interval. Ocelli subequal, those of posterior pair widely separated, distinctly behind middle of eyes. Antennæ of normal form and structure, about 2.2 times the length of head; segments 1 and 2 and 6–8 concolorous with head; 3–5 yellow, 4 infuscate in apical two-fifths and 5 in apical half.

Prothorax distinctly longer than head and about 1.4 times as wide as long, suborbicular in form with anterior margin straight; pronotum with a few very faint anastomosing lines along median portion of extreme anterior margin and with the posterior margin slightly transversely rugose; bristles unusually long, dark brown in color, of the same size, number, and arrangement as in *F. annulipes*.* Wings of fore pair about thirteen times as long as width at middle, set with unusually long, heavy, nearly equidistant brown bristles, of which there are about 30 on costa, 23 on anterior vein, and 18 on the posterior vein.

Abdomen broader than pterothorax; tergite of segment 1 with oblique anastomosing striæ, other segments with very indistinct striæ at sides; segment 10 divided above in apical two-thirds; abdominal bristles long, stout, nearly black.

Measurements of holotype: Length 1.60 mm.; head, length 0.172 mm., width 0.204 mm.; prothorax, length 0.196 mm., width 0.281 mm.; pterothorax, width 0.396 mm.; fore wing, length, 1.128 mm., width near base 0.120 mm., at middle 0.085 mm.; abdomen, width 0.456 mm.

Antennal segments:	1	2	3	4	5	6	7	8
Length (μ)	33	54	75	69	46	58	11	15
Width (μ)	38	30	27	24	21	21	9	7
Total length of antenna, 0.361 mm.								

Described from 5 females taken by Prof. Patricio Cardin, at Santiago de las Vegas, Cuba, April 23, 1915, in citrus flowers.

Allied to *F. annulipes* and *F. auripes*, but easily distinguished from

* See Ins. Insc. Menstr., Vol. III, Pl. II, Fig. 3; May, 1915.

the former by the color of the legs and from the latter by the longer prothorax and the long, strong bristles of the prothorax and fore wings. The figure of *annulipes* cited above would serve almost equally well for the present species.

***Physothrips pictus* sp. nov.**

Female (macropterous).—Length about 1.6 mm. Color bright yellow, with brown markings on pterothorax and antennæ, with fore wings brown in second and fourth fourths, and with abdominal tergites 2-4 and 6-7 fasciate with brown, 8 with a transverse brown blotch, and 9-10 dark brown beyond basal sixth of 9.

Head about 1.3 times as wide as long, slightly broadest behind eyes, sides evenly arcuate to eyes and to base; occiput with five transverse raised lines, only slightly anastomosing, the anterior one strongest, the remainder of head smooth; frontal costa narrow, with a very shallow notch; interocellar bristles prominent, brown, equal in length to eyes, situated well within the ocellar triangle, their bases being directly behind the lateral margins of anterior ocellus; all other cephalic bristles minute. Eyes 0.6 as long as head, and slightly narrower than their interval. Ocelli nearly equidistant, subequal in size, posterior pair about opposite posterior half of eyes; pigment bright red. Antennæ fully 2.5 times the length of head, of normal form and structure, segment 3 slightly longer than 4, the sense cones on 3 and 4 forked; segments 1-3 yellow, 1 and 2 darkened laterally with brown; 4 yellow in basal two-fifths, remainder brown, paler at apex; 5 yellow in basal third, thence brown, somewhat annulate with paler, the apex darkest; 6 a rich nut-brown in basal two-thirds, the remainder and all of 7-8 mouse-gray.

Prothorax about 1.2 times the length of head and about 1.5 times as wide as long; pronotum smooth; two strong dark bristles, distinctly longer than interocellars, at posterior angles; all other bristles small, brown in color, and quite distinct, the mediad posterior marginal pair and one or two sublateral pairs slightly larger. Wings of fore pair fifteen times as long as width at middle, pale yellowish with two dark brown bands occupying approximately the second and fourth fourths; fore vein with seven dark bristles near base (the last one just within the first dark band) and three widely separated ones in apical portion; hind vein with a series of about thirteen equidistant bristles beginning behind the last one in the basal series of the fore vein. Legs uniform lemon yellow.

Abdomen of normal form, almost without sculpture, lemon yellow in color, with dorsal dark brown blotches on each of tergites 2-4, occupying all except the posterior lateral angles; segment 5 uniform yellow; tergites 6 and 7 dark brown; 8 with a transverse, elliptical blotch occupying a little more than the basal half of the segment and extending well to the sides; 9 abruptly dark brown beyond basal sixth; 10 dark brown; segment 8 with a very fine regular, close, complete comb; segment 10 divided above almost to base; abdominal bristles long, strong, nearly black.

Measurements of holotype: Length 1.64 mm.; head, length 0.150 mm., width 0.192 mm.; prothorax, length 0.175 mm., width 0.268 mm.;

pterothorax, width 0.368 mm.; fore wing, length 1.02 mm., width near base 0.108 mm., at middle 0.068 mm.; abdomen, width 0.438 mm.

Antennal segments:	1	2	3	4	5	6	7	8
Length (μ)	39	53	73	63	50	63	13	25
Width (μ)	36	32	25	24	21	20	8	6
Total length of antenna, 0.379 mm.								

Male (macropterous).—Length about 1.2 mm. Color almost identical with that of female. Ninth abdominal tergite with three pairs of stout, strong, black spines (the second pair longest) whose bases form an almost perfect hexagon; sternites without the usual pale sensory areas.

Measurements of allotype: Length 1.22 mm.; head, length 0.122 mm., width 0.168 mm.; prothorax, length 0.156 mm., width 0.223 mm.; pterothorax, width 0.294 mm.; fore wing, length 0.768 mm., width near base 0.075 mm., at middle 0.048 mm.; abdomen, width 0.252 mm.

Antennal segments:	1	2	3	4	5	6	7	8
Length (μ)	32	45	59	51	43	52	9	19
Width (μ)	30	29	24	22	19	18	7	5
Total length of antenna, 0.310 mm.								

Described from 4 females and 2 males taken at Ibadan, Southern Nigeria, in flowers of *Melia azedarach* Linné, January 14, 1915, by Arthur W. Jobbins-Pomeroy.

An unusually pretty species, which may at once be known by its coloration.

***Odontothrips pictipennis* sp. nov.**

(Pl. III, Fig. 3.)

Female (macropterous).—Length about 1.3 mm. Color blackish brown, with tarsi, fore tibiae, and antennal segments 3 and 4 yellow; fore wings white, tipped with gray and with a dark gray band in middle third.

Head 1.28 times as wide as median dorsal length, cheeks almost straight and parallel; frontal costa very narrow, not emarginate; vertex transversely rugose, slightly impressed; occiput with several rather strong, transverse, anastomosing lines; interocellar bristles long and strong, nearly half the length of head; all other cephalic bristles minute. Eyes setose, about 0.6 as long as head and about 0.7 as wide as their interval. Ocelli subequal in size, with maroon pigment, posterior ocelli distinctly behind middle of eyes, and about 0.6 as far from anterior ocellus as from each other. Antennæ about two and one-third times as long as head; segments 1 and 2 concolorous with head; 3 and 4 yellow, the latter infuscate apically; 5-8 dark brown; sense cone on inner surface of segment 6 attached at base only.

Prothorax about 1.3 times as long as head and nearly 1.4 times as wide as long, suborbicular in form with anterior margin nearly straight; pronotum smooth; posterior angular bristles long and strong, about one-third the length of prothorax; other bristles small and inconspicuous. Wings of fore pair brown at extreme base, white beyond in basal third, gray in middle third, and with the apical third white, except for a small

gray spot at extreme tip of wing; fore wing about ten times as long as width at middle and about 1.36 times as wide just beyond scale as at middle; costal margin, anterior vein, and posterior vein with 24, 16, and 15 bristles, respectively, those of the anterior vein distributed evenly in basal two-thirds, except for two close to apex of wing, those of posterior vein equidistant, beginning at the fork. Legs stout; fore tibia with a long hook on lower outer surface of apex, and with a calcar on lower inner surface.

Abdomen moderately stout, smooth, broader than pterothorax; posterior margin of segment 8 with a broad median gap in the comb-like fringe of spines; segment 10 not divided above, though irregularly weakened along median line.

Measurements of holotype: Length 1.30 mm.; head, length 0.126 mm., width 0.161 mm.; prothorax, length 0.164 mm., width 0.224 mm.; pterothorax, width 0.300 mm.; fore wing, length 0.876 mm., width at base 0.090 mm., at middle 0.066 mm.; abdomen, width 0.358 mm.

Antennal segments:	1	2	3	4	5	6	7	8
Length (μ)	33	46	53	49	36	51	10	18
Width (μ)	34	29	25	25	21	23	9	7
Total length of antenna, 0.296 mm.								

Described from one female taken in a flower of *Azalea nudiflora* L., at Great Falls, Virginia, May 19, 1915, by W. L. McAtee.

The coloration of the wings and antennæ, and the mode of attachment of the sense-cone on the inner surface of the sixth antennal segment, separate this species quite sharply from its congeners. For the opportunity of comparing it with the described European forms, I must express my obligation to Mr. C. B. Williams.

***Pseudothrips spadix* sp. nov.**

Female (macropterous).—Length about 1.4 mm. Color hazel-brown; legs yellow, shaded with brown; segment 3 of antennæ gray-yellow, 4-6 successively darker.

Head about 1.3 times as wide as long, slightly broadest across eyes, sides nearly straight, converging somewhat to base; vertex depressed; frontal costa narrow, not emarginate; occiput with a few anastomosing lines; interocellar bristles very long, half the length of head; a pair of approximate minute bristles in front of anterior ocellus and a similar pair near inner margin of eyes; postocular bristles minute, subequal. Eyes about two-thirds the length of head, distinctly narrower than their interval. Ocelli nearly equidistant, subequal in size, posterior pair slightly behind middle of eyes; pigment brick-red. Antennæ 9-segmented, 2.5 times as long as head, slender; segment 1 short, about as wide as long; 2 about 1.7 times as long as wide and 1.4 times the length of 1; 3 and 4 long and slender, about three times as long as wide, pedicellate, constricted at apex, with forked sense-cones; 5 slightly narrower than either 4 or 6, about 2.6 times as long as wide; 6-9 closely united, together nearly 1.2 times the length of 3; segments 1 and 2 concolorous with head;

3 grayish yellow; 4-6 successively darker; 7-9 slightly paler. Maxillary palpi three-segmented.

Prothorax 1.1 times as long as head and about one and one-half times as wide as long; pronotum smooth; one prominent dark bristle at posterior angle, about 0.8 the length of prothorax, and another pair half as long on posterior margin near median line; other bristles short and inconspicuous. Wings of fore pair about twelve times as long as width at middle, nearly uniform brownish gray; costa, principal vein, and posterior vein with about 27, 20, and 14 nearly equidistant, long bristles, respectively.

Abdomen of normal form, with a few very faint lines of sculpture at sides; tergites 2-6 with a gradually increasing number of slender spines along lateral portion of posterior margins; 7 and 8 with an uninterrupted posterior fringe of similar spines; segments 9 and 10 rather long, acutely conical, with long, prominent, dark bristles; 10 divided above in apical four-fifths.

Measurements of holotype: Length 1.36 mm.; head, length 0.140 mm., width 0.185 mm.; prothorax, length 0.156 mm., width 0.240 mm.; pterothorax, width 0.312 mm.; fore wing, length 0.840 mm., width near base 0.090 mm., at middle 0.067 mm.; abdomen, width 0.360 mm.

Antennal segments:	1	2	3	4	5	6	7	8	9
Length (μ)	36	50	72	62	49	48	9	11	15
Width (μ)	35	30	25	21	19	21	14	11	9
Total length of antenna, 0.352 mm.									

Described from 4 females taken at Panama City, Panama, in 1915, "in blue flower on bush," by James Zetek.

A very distinct species, easily known by its large size and dark color.

Chilothrips gen. nov.

(Χείλος, a lip; Θριψ, a wood worm.)

Body almost free from sculpture. Head short and broad, nearly twice as wide as long, broadest near base; vertex with an acute tubercle below anterior ocellus. Eyes small, shorter than cheeks and only about half as wide as their interval. Antennæ eight-segmented, inserted on lower surface of head below vertex; segments 3 and 4 with forked sense-cones. Mouth-cone very large and elongate, heavily chitinized, extending far onto mesosternum; maxillary palpi three-segmented, basal segment longest, middle segment shortest. Prothorax long, fully twice the length of head, only slightly widened behind, with sides nearly straight; posterior angles with one pair of short bristles. Wings slender, only slightly wider at base, bristles arranged as in *Oxythrips*. Abdomen of female sharply conical at tip, the tenth segment distinctly longer than ninth.

Type—*Chilothrips pini* sp. nov.

Closely related to *Oxythrips*, but separable by the enlarged mouth-cone, the short head, and the insertion of the antennæ below the vertex.

Chilothrips pini sp. nov.

Female (macropterous).—Length about 1.4 mm. Color amber-brown, tinged with rufous, with abdominal segments margined at base with a narrow, dark brown line; antennæ slightly paler in the three basal segments, legs paler at articulations; fore wings brownish drab.

Head nearly twice as wide as median dorsal length, broadest near base, cheeks nearly straight, slightly diverging behind, anteriorly abruptly rounded to eyes; occiput with about ten distinct anastomosing lines; intercellular bristles small and inconspicuous; other bristles minute. Eyes very minutely setose, shorter than cheeks and only about half as wide as their interval. Ocelli subequal in size, the posterior pair rather widely separated; pigment red. Antennæ three times as long as head, inserted below vertex, formed as in *Oxythrips*; segment 1 broader than long and about two-thirds the length of 2, which is about two-thirds as wide as long; apical segments quite slender. Mouth-cone very large and elongate, strictly conical and with sides straight, reaching about one-third across mesosternum.

Prothorax fully twice the length of head, sides straight, very slightly diverging posteriorly, where it is slightly wider than median dorsal length; posterior angles with one pair of short bristles; surface nearly smooth, with a few faint striae near posterior margin. Wings of fore pair pale brownish drab, slightly darker apically; costa with about 31 bristles; principal vein with a basal group of about four bristles, a group of three at the fork, and three spaced evenly in apical two-thirds; posterior vein with a nearly equidistant series of about ten, beginning just after the second group of the principal vein. Legs moderately slender; fore tarsus unarmed on outer lower surface of tip.

Abdomen slightly wider than pterothorax, smooth; segment 10 acutely conical, longer than ninth, not divided above; bristles moderately long, yellow.

Measurements of holotype: Length 1.38 mm.; head, length 0.096 mm., width 0.185 mm.; prothorax, length 0.204 mm., width 0.218 mm.; pterothorax, width 0.271 mm.; fore wing, length 0.900 mm., width near base 0.091 mm., at middle 0.063 mm.; abdomen, width 0.336 mm.

Antennal segments:	1	2	3	4	5	6	7	8
Length (μ)	27	42	48	43	41	56	13	18
Width (μ)	34	27	21	20	19	20	8	6
Total length of antenna, 0.288 mm.								

Described from 42 females, all taken on twigs and leaves of *Pinus virginiana*, as follows: Bladensburg, Maryland (type locality), April 8, 1915 (2 females) [L. O. Jackson]; Bladensburg, Maryland, April 12, 1915 (32 females) [L. O. Jackson, E. R. Kalmbach, and J. D. Hood]; Dyke, Fairfax County, Virginia, April 15, 1915 (8 females) [L. O. Jackson].

The extraordinary mouth-cone of this insect has prevented its assignment to the genus *Oxythrips*, with which it agrees, however, in many details of structure, particularly those pertaining to the antennæ and

wings. Mounted specimens invariably have the head tipped slightly downward, due to the forcing back of the mouth-cone by unavoidable pressure between the coverglass and slide; and this has, of course, affected the accuracy of the measurements and proportions given above, and may be partly responsible for the apparent insertion of the antennæ below the vertex.

Haplothrips malifloris sp. nov.

Female (macropterous).—Length about 1.6 mm. Color dark blackish brown, with fore tarsi, apices of fore tibiæ, and third antennal segment paler; fore wings clear, with the scale and the extreme base dark brown.

Head about 1.26 times as long as wide, with sides slightly arcuate, and nearly as wide at posterior margin of eyes as at base; vertex subconically produced over base of antennæ to far in front of eyes, the anterior ocellus overhanging and much surpassing frontal costa; dorsal and lateral surfaces with faint, close, anastomosing striæ and a few minute spines; postocular bristles pointed, about 0.8 the length of eyes. Eyes small, about 0.3 as long as head and 0.6 as wide as their interval. Ocelli anterior in position, the posterior pair opposite anterior third of eyes. Antennæ twice as long as head; segment 1 a little longer than wide; 2 about 1.7 times as long as wide; 3 about twice as long as wide, inner surface less arched than outer; 4 swollen, longest and widest in entire antenna, about 1.8 times as long as wide; 5 nearly twice as long as wide, obliquely truncate at apex; 6 nearly 2.4 times as long as wide, pedicellate, obliquely truncate at apex; 7 about 2.5 times as long as wide, broadest at middle, pedicellate, sides evenly arcuate; 8 subconical, with length more than twice the width, firmly united to 7; sense cones short, inconspicuous; formula: 3, 0-1; 4, 2-2; 5, 1-1+1; 6, 1-1+1; 7 with one on dorsum near apex; antennæ concolorous with body, except segment 3, which is paler in general color and distinctly yellowish along middle and at base.

Prothorax along median dorsal line about half as long as head and (inclusive of coxæ) 2.5 times as wide as long, surface smooth; all usual bristles present, pointed; the two pairs at posterior angles about equal in length to postoculars, the others much shorter. Wings distinctly narrowed at middle, the fore pair rather broadly expanded along costal margin near base, and with the scale and extreme base dark brown; third subbasal bristle long, pointed, the others very much shorter; no subapical accessory hairs on posterior margin. Tarsal tooth minute, arising at a right angle.

Abdomen only slightly wider than pterothorax; tergite 1 almost smooth; tergites 2-6 very faintly striate with subreticulate, anastomosing lines; distal tergites nearly smooth. Tube expanded basally, about two-thirds as long as head, a little more than twice as long as basal width, and slightly more than twice as wide at base as at apex. Bristles pointed, terminal ones light brown and distinctly shorter than tube, others colorless.

Measurements of holotype: Length 1.64 mm.; head, length 0.223 mm.,

width 0.178 mm.; prothorax, length 0.120 mm., width (inclusive of coxæ) 0.301 mm.; pterothorax, width 0.360 mm.; abdomen, width 0.392 mm.; tube, length 0.150 mm., width at base 0.069 mm., at apex 0.031 mm.

Antennal segments:	1	2	3	4	5	6	7	8
Length (μ)	36	50	52	57	52	55	48	28
Width (μ)	29	29	27	32	28	23	19	12
Total length of antenna, 0.378 mm.								

Male (macropterous).—Much like female and of nearly the same size, but with more slender antennæ. Fore legs scarcely more enlarged than in female; tarsi more strongly toothed, the tooth nearly equilaterally triangular.

Measurements of allotype: Length 1.62 mm.; head, length 0.228 mm., width 0.166 mm.; prothorax, length 0.128 mm., width (inclusive of coxæ) 0.302 mm.; pterothorax, width 0.360 mm.; abdomen, width 0.367 mm.; tube, length 0.162 mm., width at base 0.069 mm., at apex 0.033 mm.

Antennal segments:	1	2	3	4	5	6	7	8
Length (μ)	36	50	54	58	56	57	49	28
Width (μ)	29	29	27	31	26	22	18	12
Total length of antenna, 0.388 mm.								

Described from 22 females and 6 males taken from the flowers of apple, at Roswell, New Mexico, in May, 1912, by the late Mr. A. G. Hammar.

A very distinct species, remarkable for the produced vertex and the absence of accessory hairs on the posterior margin of the fore wings. It takes a natural place in the vicinity of *jonesii* and *halophilus*.

***Trichothrips fuscicornis* sp. nov.**

Female (macropterous).—Length about 2 mm. Color blackish brown, paler posteriorly, with tarsi, apices of tibiae, and tube paler, the tube with a decided suffusion of orange; antennæ concolorous with body.

Head about 1.17 times as long as wide, sides straight, abruptly rounded to eyes and slightly converging posteriorly, occipital region faintly subreticulate with anastomosing lines; postocular bristles pointed, about one and one-third times as long as eyes; other bristles minute. Eyes small, only about one-fifth the length of head. Anterior ocellus directed slightly forward, and somewhat overhanging; posterior ocelli opposite middle of eyes. Antennæ about 1.9 times the length of head; segment 1 about three-fourths as wide as long, tapering slightly to apex; 2 longer and narrower than 1, subequal in length to 3-5, which are abruptly pedicellate and successively narrower; 7 shorter than either 6 or 8; 8 lanceolate, pedicellate; sense-cones short and moderately stout; formula: 3, 1-2; 4, 2-2; 5, 1-1+1; 6, 1-1+1; 7 with one on dorsum near apex. Mouth-cone reaching fully two-thirds across prosternum; labrum just attaining tip of labium, which is rather broadly rounded.

Prothorax smooth, about 0.6 as long as head and (inclusive of coxæ) a

little more than twice as wide as long; all usual bristles present, the two pairs at the posterior angles longest, subequal in length to postoculars; coxal bristle somewhat shorter, midlaterals still shorter, anterior marginal and anterior lateral pairs only about half as long. Pterothorax slightly wider than prothorax, narrower posteriorly. Wings of equal width throughout, light gray-brown in color, slightly paler at either end; posterior fringe double for four or five hairs; the three subbasal spines on fore wing of equal length, pointed. Fore tarsus unarmed.

Abdomen of normal form and structure, wider than pterothorax. Tube 0.8 the length of head, slender, twice as wide at base as at apex, sides straight. Bristles yellow, moderately long and pointed, those on segment 9 slightly more than half as long as tube; terminal bristles about three-fourths the length of tube.

Measurements of holotype: Length 2.04 mm.; head, length 0.288 mm., width 0.246 mm.; prothorax, length 0.180 mm., width (inclusive of coxæ) 0.390 mm.; pterothorax, width 0.438 mm.; abdomen, width 0.498 mm.; tube, length 0.228 mm., width at base 0.087 mm., at apex 0.042 mm.

Antennal segments:	1	2	3	4	5	6	7	8
Length (μ)	63	72	72	72	71	65	61	67
Width (μ)	46	39	43	42	39	37	28	19
Total length of antenna, 0.543 mm.								

Described from one female taken at Annapolis, Maryland, May 8, 1915, by O. D. Knight and the writer. It flew aboard a naval launch well out in the River Severn.

The antennal coloration and the pedicellate eighth antennal segment, together with the unarmed fore tarsi and the long tube, distinguish this species quite readily.